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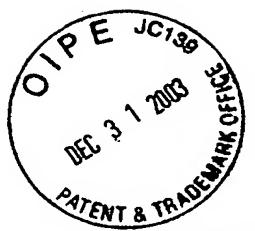
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PATENT 8 TR	ANDE			U.S. Pate	ent and T	Approved for rademark Off	r use throug fice; U.S. D	PTO/SB/21 (08-03) gh 08/30/2003. OMB 0651-0031 EPARTMENT OF COMMERCE
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TF	TRANSMITTAL			Filing Date	12/25/	2/25/2003		
	FO	RM		First Named Inventor	Chun-	Yao Chen		
(to be used for	all corresp	ondence after initial	filing)	Art Unit		<del>-</del>	-	
		•		Examiner Name		,		
Total Number of	Pages in	This Submission	3	Attorney Docket Number	ОТМР	0059USA		
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**TOTAL AMOUNT OF PAYMENT** 

PTO/SB/17 (10-03)

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CEE TO A NOMITTAL	Complete if Known			
FEE TRANSMITTAL	Application Number	10/707,625		
for FY 2004	Filing Date	12/25/2003	-	
Effective 10/01/2003. Patent fees are subject to annual revision.	First Named Inventor	Chun-Yao Chen		
<u>·</u>	Examiner Name			
Applicant claims small entity status. See 37 CFR 1.27	Art Unit			

Attorney Docket No.

(\$) 0.00

METHOD OF PAYMENT (check all that apply) FEE CALCULATION (continued) 3. ADDITIONAL FEES Money Credit card Check Other None Order Large Entity , Small Entity Deposit Account: Fee Fee Fee Fee **Fee Description** Deposit Code (\$) Code (\$) Fee Paid 50-0801 Account 1051 130 2051 65 Surcharge - late filing fee or oath Number Deposit 1052 50 2052 25 Surcharge - late provisional filing fee or North America International Patent Office Account cover sheet Name 1053 130 1053 130 Non-English specification The Director is authorized to: (check all that apply) 1812 2.520 For filing a request for ex parte reexamination 1812 2,520 Charge fee(s) indicated below Credit any overpayments 920\* Requesting publication of SIR prior to 1804 920\* 1804 Charge any additional fee(s) or any underpayment of fee(s) **Examiner action** Charge fee(s) indicated below, except for the filing fee 1805 1,840 1805 1,840\* Requesting publication of SIR after Examiner action to the above-identified deposit account. 0.00 1251 110 2251 55 Extension for reply within first month **FEE CALCULATION** 210 Extension for reply within second month 1252 420 2252 1. BASIC FILING FEE 950 2253 1253 475 Extension for reply within third month Large Entity Small Entity Fee Paid Fee Fee Fee Fee Fee Description 1254 1,480 2254 740 Extension for reply within fourth month Code (\$) Code (\$) 1.005 Extension for reply within fifth month 1255 2,010 2255 1001 770 2001 385 Utility filing fee 1401 330 2401 165 Notice of Appeal 1002 340 2002 170 Design filing fee 1402 330 2402 165 Filing a brief in support of an appeal 2003 265 530 Plant filing fee 1003 1403 290 2403 145 Request for oral hearing 1004 770 2004 385 Reissue filing fee 1005 160 1451 1,510 1451 1,510 Petition to institute a public use proceeding 2005 80 Provisional filing fee 1452 110 2452 55 Petition to revive - unavoidable **SUBTOTAL (1)** (\$) 0.00 1453 1,330 2453 665 Petition to revive - unintentional 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE 665 Utility issue fee (or reissue) 1501 1,330 2501 Fee from **Extra Claims** Fee Paid below 1502 480 2502 240 Design issue fee Total Claims -20\*\* = 1503 640 2503 320 Plant issue fee Independent - 3\*\* = 130 Petitions to the Commissioner 130 1460 Claims 1460 Multiple Dependent 1807 50 1807 50 Processing fee under 37 CFR 1.17(q) Large Entity [ Small Entity 1806 180 1806 180 Submission of Information Disclosure Stmt Fee Fee Fee Fee Description Fee 40 Recording each patent assignment per Code (\$) Code (\$) 8021 40 8021 property (times number of properties) Claims in excess of 20 1202 18 2202 9 385 Filing a submission after final rejection 1809 770 2809 2201 43 Independent claims in excess of 3 1201 86 (37 CFR 1.129(a)) 1203 290 2203 145 Multiple dependent claim, if not paid 770 385 For each additional invention to be 1810 2810 examined (37 CFR 1.129(b)) 2204 43 \*\* Reissue independent claims 1204 86 over original patent 385 Request for Continued Examination (RCE) 770 1801 2801 900 1802 1802 \*\* Reissue claims in excess of 20 900 Request for expedited examination 1205 18 2205 9 and over original patent of a design application Other fee (specify) (\$) 0.00SUBTOTAL (2) \*Reduced by Basic Filing Fee Paid **SUBTOTAL (3)** (\$) 0.00 \*\*or number previously paid, if greater; For Reissues, see above

SUBMITTED BY	-			(Complete	e (if applicable))
Name (Print/Type)	Winston Hsu	1 1 -	Registration No. 41,526	Telephon	e 886289237350
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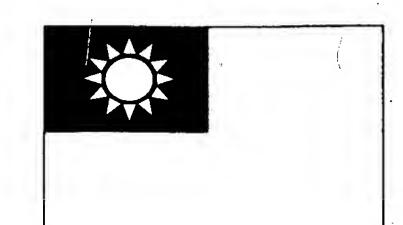
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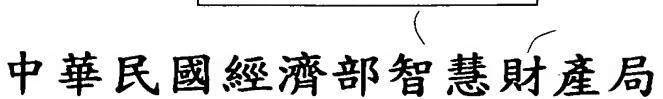
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# **DECLARATION** — Supplemental Priority Data Sheet

Additional foreign applications:							
Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES NO			
092200785	Taiwan R.O.C	01/13/2003					
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兹證明所附文件,係本局存檔中原申請案的副本,正確無訛,

其申請資料如下

This is to certify that annexed is a true copy-from the records of this office of the application as originally filed which is identified hereunder:

: 西元 2003 年 01

Application Date

號 092200785

Application No.

: 中強光電股份有限公司

Applicant(s)

局 Director General



西元 2003 發文日期:

Issue Date

09220939310 發文字號:

Serial No.

申請日期:	IPC分類	
申請案號:		

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以上各欄	田本句項	新型專利說明書
	中文	背投影顯示裝置之殼體結構
<b>听型名稱</b>	英 文	Casing structure for rear projection apparatus
	姓 名 (中文)	1. 陳俊堯 2. 康志忠 3. 曾湧泉
	(英文)	1.Chen Chun Yao 2.Kang Chih Chung 3.Tseng Yung Chuan
創作人 (共3人)	國 籍 (中英文)	1. 中華民國 TW 2. 中華民國 TW 3. 中華民國 TW
	住居所(中文)	1. 新竹科學工業園區新竹市力行路11號 2. 新竹科學工業園區新竹市力行路11號 3. 新竹科學工業園區新竹市力行路11號
	住居所 (英 文)	1. No 11, Li Hsing Rd, Science-Based Industrial Park, Hsinchu, R.O.C 2. No 11, Li Hsing Rd, Science-Based Industrial Park, Hsinchu, R.O.C 3. No 11, Li Hsing Rd, Science-Based Industrial Park, Hsinchu, R.O.C
	名稱或 姓 名 (中文)	1. 中強光電股份有限公司
	名稱或 姓 名 (英文)	1. Coretronic Corporation
三、	國 籍 (中英文)	1. 中華民國
	住居所 (營業所) (中 文)	1. 新竹科學工業園區新竹市力行路11號 (本地址與前向貴局申請者相同)
	住居所 (營業所) (英 文)	
	代表人(中文)	1. 張威儀
	代表人(英文)	1. Wade Chang



#### 四、中文創作摘要 (創作名稱:背投影顯示裝置之殼體結構)



陸、英文創作摘要 (創作名稱:Casing structure for rear projection apparatus)

A casing structure for rear projection apparatus comprises a base plate installed an electrical module and an optical module, a rear cover on the base plate, and a frame with a screen on the front of the rear cover. The flange of the rear cover inserts into the grooves of the base plate, then the rear cover is screwed to base plate by fastening elements on the inside, and then the frame with a screen seals the front window of the rear cover, immediately a panel cover and a sound cover is installed on the frame of base plate to

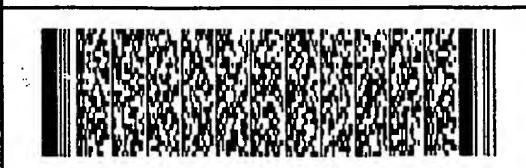




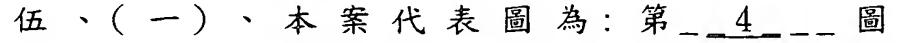
四、中文創作摘要 (創作名稱:背投影顯示裝置之殼體結構)

陸、英文創作摘要 (創作名稱:Casing structure for rear projection apparatus)

be simply assembled the casing structure. Further, it can be adjusted the inner elements after disassembly the panel cover to reduce the adjusting time.



四、中文創作摘要 (創作名稱:背投影顯示裝置之殼體結構)



(二)、本案代表圖之元件代表符號簡單說明:

設體結構
 20
 基板
 21
 背蓋
 22
 登幕框架
 3
 登幕
 3
 3
 4
 面板蓋
 5

陸、英文創作摘要 (創作名稱:Casing structure for rear projection apparatus)



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國家(地區)申請專利 申請日期

案號

主張專利法第一百零五條準用 第二十四條第一項優先權

二、□主張專利法第一百零五條準用第二十五條之一第一項優先權:

申請案號:

日期:

三、主張本案係符合專利法第九十八條第一項□第一款但書或□第二款但書規定之期間 日期:



#### 五、創作說明 (1)

【新型所屬之技術領域】

本創作係有關背投影顯示裝置,尤其係指一種背投影裝置之殼體結構。

#### 【先前技術】

目前投影顯示裝置主要分為兩種,一為映像管(Cathode Ray Tube, CRT)技術、另一為利用內藏光機引擎之背投影技術;而CRT技術因顯示尺寸增加,隨之造成裝置體積增大,因此,已不敷使用於講究輕、薄、短、小之場合;而背投影技術可具有高亮度及體積較薄小之特點,目前常被應用於家用電視、家庭電影院、電動玩具、視訊會議等大尺寸顯示之場合。

請參閱第1圖所示,習知背投影顯示裝置包括一殼體1、及置於殼體1內之光學投影系統,其中光學投影系統包括光機2、反射鏡3及螢幕4;藉由光機2產生一影像光東並投射於反射鏡3上,後反射之光東再投射於螢幕4以完成影像呈現。

而光機 2 提供之影像光束其投射路徑係決定投射於螢幕 2 之影像是否歪斜,然各光學元件及殼體 1 存在製造公差,及組裝會產生累積公差,因此組裝後需藉調整光機 2 及反射鏡 3 之相對位置,使影像對正並以適當比率投射於螢幕 4 ,致系統具有最佳投影效果。

請參閱第2圖所示,係台灣第88120280號專利所揭示之背投影顯示裝置10結構,其包括一下殼體11、 一上殼體12、一光機13、一反射鏡14及一顯示幕





#### 五、創作說明 (2)

;該下框體 11上方具有一開口111,上框體 底部具有一 窗 2 該 下殼體 部 口 內 2以供固設光機13,反射鏡14則固設於該 12後側內面,顯示幕 1 5 則內嵌於上殼體 係先將光機13固定於下殼體 其組裝時, 12上,再將反射鏡14及顯示幕 上殼體12,後由下殼體11上方將上殼體12置入 而組裝完成一封閉之殼體結構。

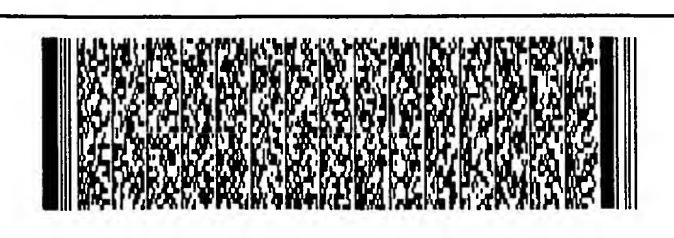
當試機時發現影像無法正確投射於顯示幕15,則需將整個上殼體12拆開後才可調整光機13位置,調整後再將上殼體12組上再進行試機,而上殼體12拆除後再組裝會造成反射鏡14位置變動,因此將增加調整時間;且下殼體11包括具有壁面及框架結構112,所以組裝電子元件及投影光學元件於下殼體時,視線易被阻擋而妨礙組裝。

另外,目前LCD螢幕或CRT螢幕其殼體組裝,常使用卡扣結合方式,但卡扣結構會阻礙模具脫模,因此於模具設計時需加設脫模設計(如滑塊等)以助脫模;且殼體以卡扣組裝後,即無法辨識卡扣結構,因此不易拆卸殼體,然卡扣結構與殼體一般係採用塑膠材質,故不當之拆裝則易使損壞卡扣結構,致造成殼體無法結合。

# 【新型內容】

本創作之一目的,係提供一種背投影顯示裝置之殼體結構,可方便調整光機與反射鏡之相對位置,且調整





#### 五、創作說明 (3)

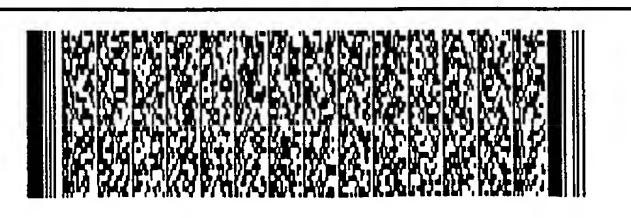
光機時不致變動反射鏡位置,可達到節省調整時間。本創作之另一目的,係提供一種背投影顯示裝置之體結構,以鎖固元件鎖固於設體內部,達到方便拆裝之殼體結構。

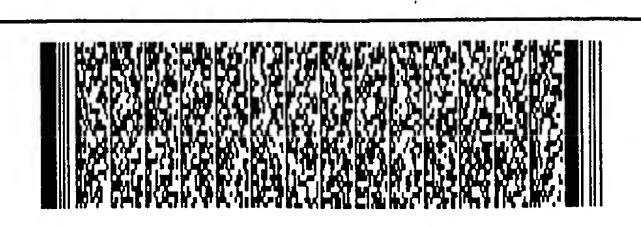
本創作之又一目的,係提供一種背投影顯示裝置殼體結構,利用溝槽與凸緣導引定位並形成平整面,以達到殼體結構美觀之效益。

#### 【實施方式】

有關本創作為達到上述目的,所採用之技術手段及其餘功效,茲舉一較佳實施例,並配合圖式加以說明如下:

請參閱第3圖所示,係本創作背投影顯示裝置之殼體結構20包括一基板21、一背蓋22及一螢幕框架23,藉由背蓋22連結於基板21上方,設有顯示螢幕232螢幕框架23設於背蓋22前端面,而組成





#### 五、創作說明 (4)

一封閉之殼體結構20。

請參閱 第 4 圖所示,其中該基板21前端垂 設一 使基板21形成一概呈L形者之結構,框架 係供電子元件如喇叭、視訊控制板(圖未示) 並形成至少一調整孔21 而基板21 1 1 2 ,供該背投影顯示裝 置之光學模組 投影 模組)、電子模組(電源供應 器、控制模組等)搭 配固定元件或調整裝置裝設於預定位置,基板2 213,以供背蓋22組裝定位用 周緣兩側開設有溝槽

背蓋22係由一圓弧板221及固設於圓弧板22 側之左側板222及右側板 2 2 3組成, 使背 面224與前端面225相連通,背蓋 2 2 之底 224延伸有凸緣 2 2 1,且該凸緣22 4 4 3 導引 溝 槽 2 1 置入, 其結合面係形成 2 2 連結於基板21上; 另背 蓋 2 使背 且於鎖 垂向設一對鎖固片22 2 , 4 固 相對應位置設有固定孔22 2 與基板 2 4 5 穿 且於 未示 以將 圖 5 3 均 2 開 2 側 板 設有 通風





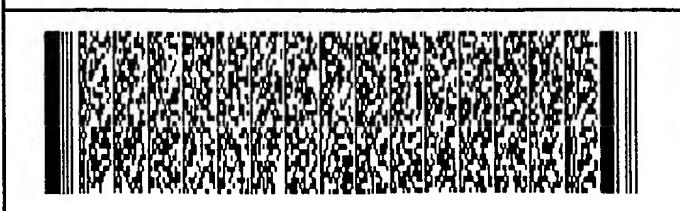
#### 五、創作說明 (5)

而該螢幕框架23係套設於背蓋22前端面225 ,其呈矩型狀並具有一窗口231,螢幕框架23內。 設一顯示螢幕232(如第3圖),並使窗口231封 閉。

其組裝過程,再參閱第4圖所示,首先,將投影 示裝置之光學模組及電子模組先固定安裝於基板 22之凸緣2241對準溝 定位置上,再将背蓋 3 置入後定位,使背蓋 11底面及側邊緣連結於基 上,形成一整體之平整面,並組成一前端面 2 口之結構,再鎖入鎖固元件215以固定結合背 ,而反射鏡可於背蓋22組裝前或後 1 6;如第5 蓋內壁 2 圖所示,背蓋 2 面 2 2 組裝完 再將固設有顯示螢幕232之螢幕框架 2 2 2 前端面 225後以埋頭螺絲鎖固 定,以封 固 22前端面 225, 並將喇叭蓋 24 \ 面 板 架211以組裝完成本創作顯示裝置之殼體 結構(如第3圖所示)

由於本創作不採用卡扣結構,所以製造時不需考量脫模設計,且殼體利用螺絲鎖固故易於拆卸。

本創作之光學模組及電子模組係先組裝於開放之基板21上,完成後再裝上背蓋22,因而可避免背蓋22阻擋組裝視線;以及基板21與背蓋22組裝時利用溝槽213與凸緣2241導引及鎖固元件215內部鎖固,並配合背蓋22兩側設置的通風口2221輔助





#### 五、創作說明 (6)

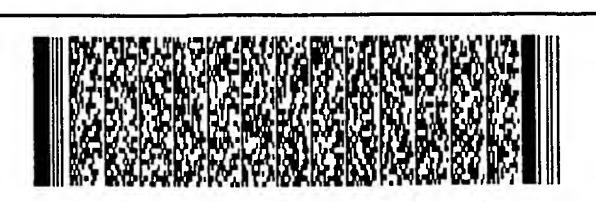
搬運,因此,可達到方便組裝背投影顯示裝置之殼體結構20。

當試機時發現影像無法正確投射於顯示幕,則僅需將面板蓋24折開後即可露出框架211形成之調整孔2111,而調整光機及反射鏡之相對位置,故反射鏡位置不致變動,且調整時可同時 顯示幕觀看畫面,因此可準確調整並節省調整時間。

另外,本創作設體結構之組裝,係利用凸緣224 1搭配溝槽213結合,並將鎖固元件215鎖固於內部而固定,因此,殼體表面不致具有裸露之螺絲頭以及不平滑之表面,而達到殼體結構美觀之效益。

以上所述,僅用以方便說明本創作之較佳實施例,本創作之範圍不限於該等較佳實施例,凡依本創作所做的任何變更,於不脫離本創作之精神下,皆屬本創作申請專利範圍。





#### 圖式簡單說明

# 【圖式簡要說明】

- 第1圖,係習知肯投影顯示裝置之示意圖。
- 第2圖,係習知另一背投影顯示裝置之側面剖視圖。
- 第3圖,係本創作背投影顯示裝置殼體結構圖。
- 第4圖,係本創作基板與背蓋分解圖。
- 第5圖,係本創作基板與背蓋組合圖。

#### 【圖號簡要說明】

- 殼體結構 20
- 基板 21
- 框架 211
- 調整孔 2111
- 表面 212
- 溝槽
   2 1 3
- 固定孔 214
- 鎖 固 元 件 2 1 5
- 背蓋 22
- 圓弧板 221
- 左側板 222
- 通風口 2221
- 右側板 223
- 通風口 2231
- 医面 224
- 3 緣 2 2 4 1
- 鎖 固 片 2 2 4 2

# 圖式簡單說明

固定孔

2 2 4 3

前端面

2 2 5

內壁面

2 2 6

螢幕框架

2 3

窗口

2 3 1

螢 幕

2 3 2

喇叭蓋

2 4

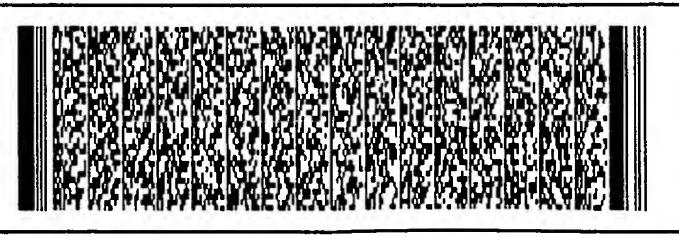
面板蓋

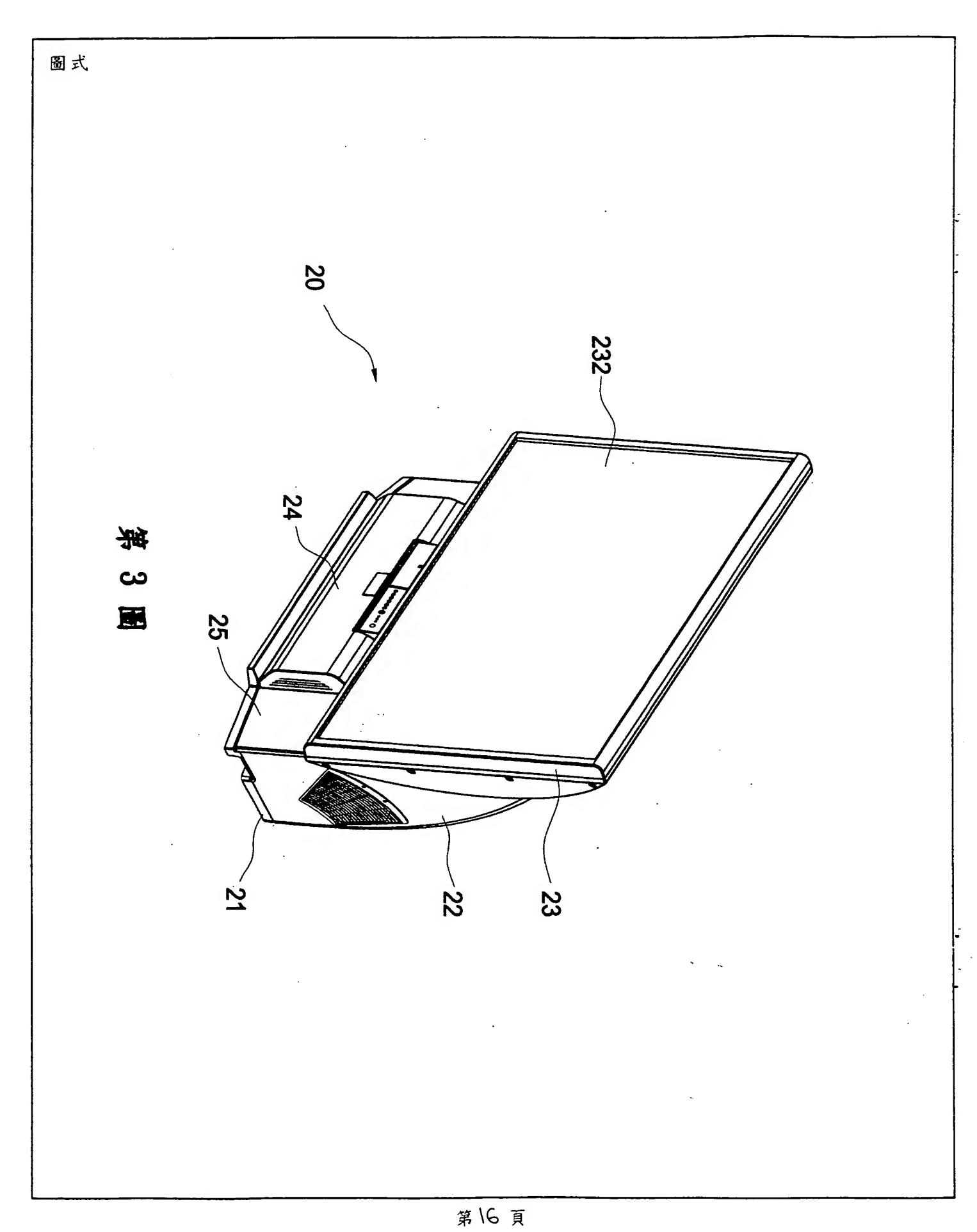
2 5

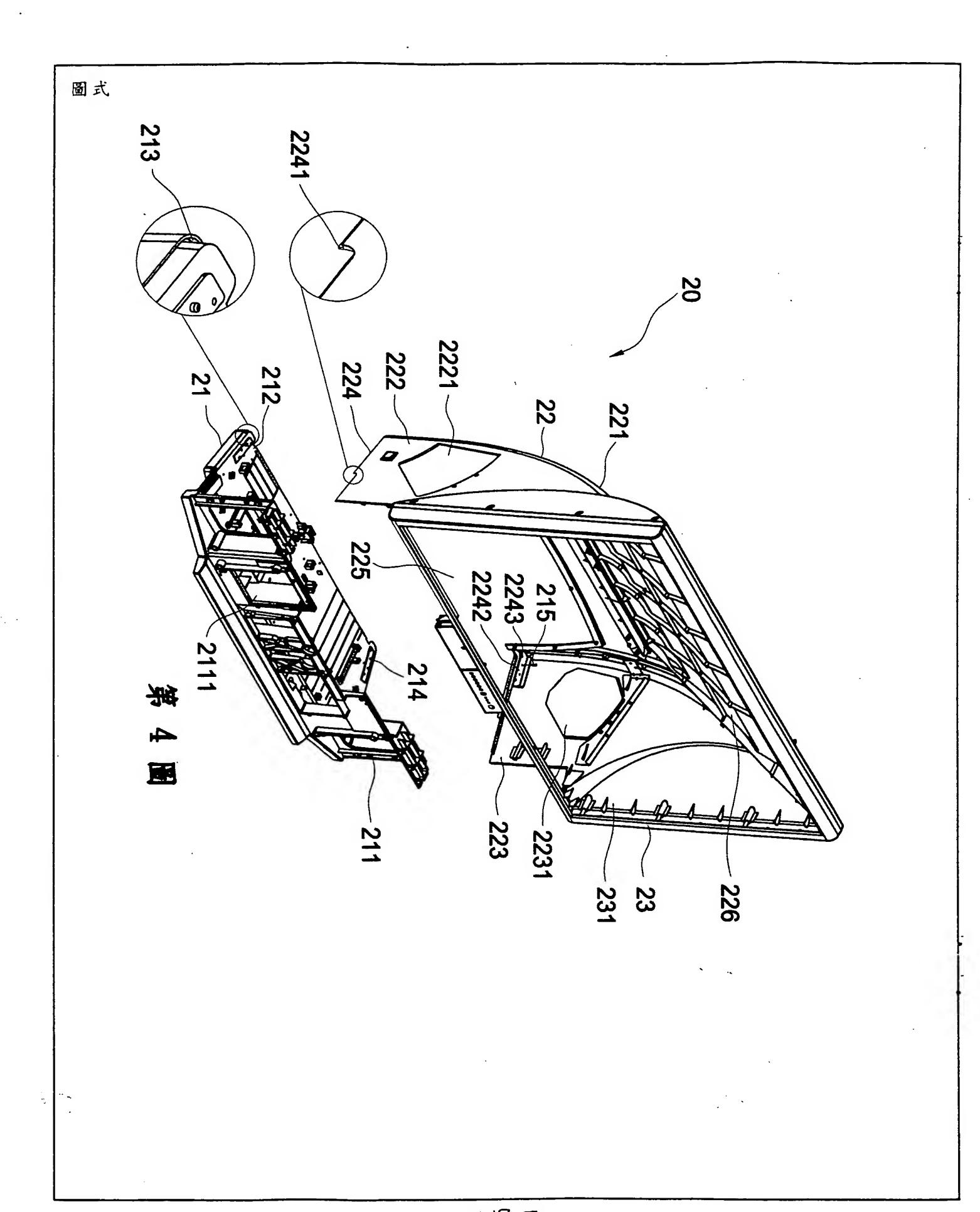


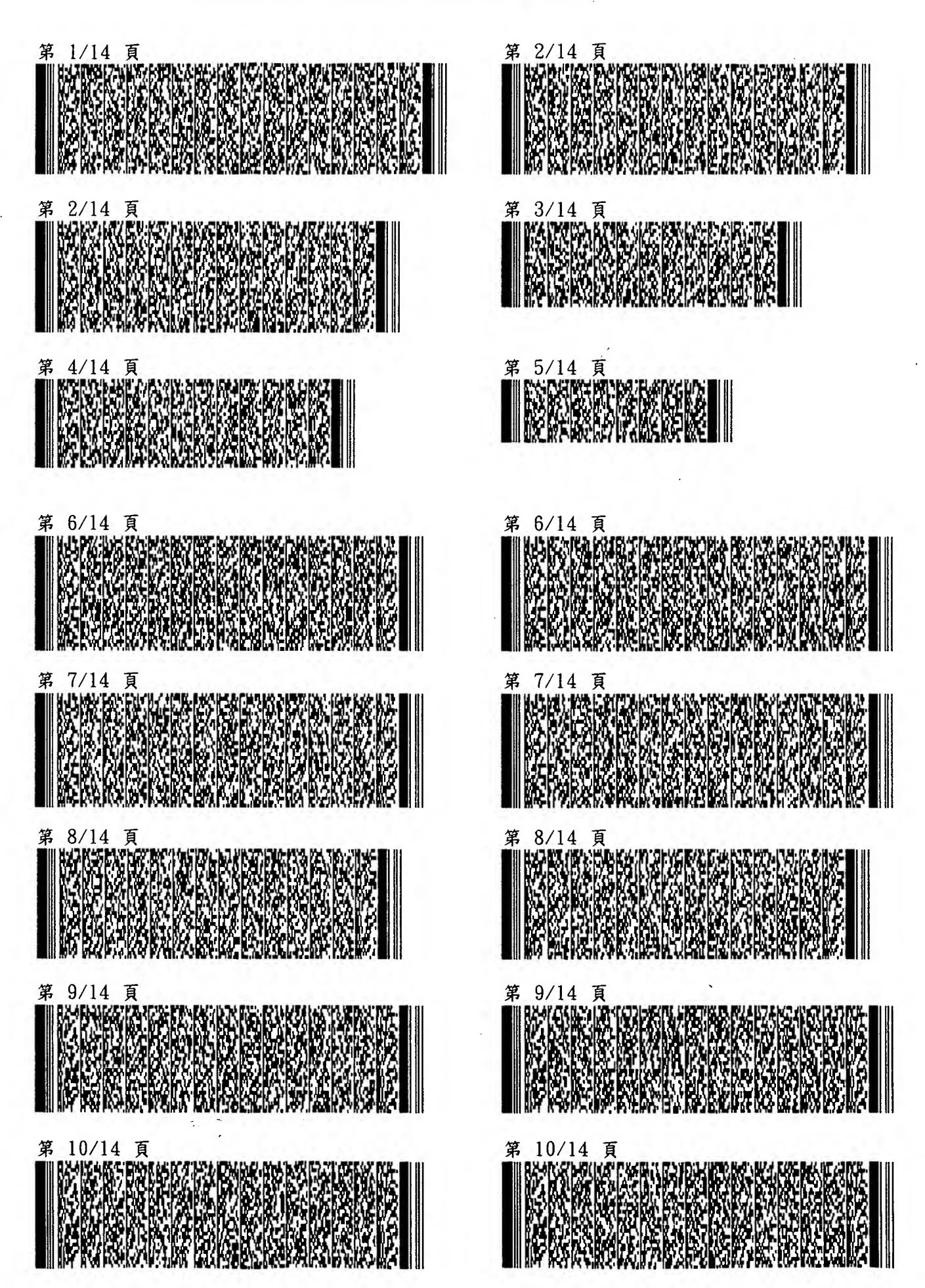
#### 六、申請專利範圍

- 1、一種背投影顯示裝置之殼體結構,其包括:
  - 一基板,其周緣開設有溝槽,該基板前端垂設一框架,形成至少一調整孔;
  - 一背蓋,其底面係連結於基板上,且具有相連通之一底面及一前端面,底面配合溝槽延伸有凸緣;以及
  - 一螢幕框架,係設於該背蓋前端面。
- 2、如申請專利範圍第1項所述之背投影顯示裝置之殼體結構,其中該基板係概呈L形者。
- 3、如申請專利範圍第1項所述之背投影顯示裝置之殼體結構,其中該背蓋係由一圓弧板及固設於該圓弧板兩側之側板形成者。
- 4、如申請專利範圍第1項所述之背投影顯示裝置之殼體結構,其中該背投影顯示裝置之電子模組及光學模組係設於該基板上。
- 5、如申請專利範圍第1項所述之背投影顯示裝置之殼體結構,其中該背蓋底面內側垂設至少一鎖固片,該鎖固片與基板上設有相對之固定孔。
- 6、如申請專利範圍第1項所述之背投影顯示裝置之殼體結構,其中該背蓋之兩側設有通風口。
- 7、如申請專利範圍第1項所述之背投影顯示裝置之殼體結構,其中該螢幕框架內固設一螢幕,並封閉該背蓋前端面。









### 申請案件名稱:背投影顯示裝置之殼體結構



